

THE LONG DOUBLE SWIVEL VISE.

After years of experimental and practical tests, the Long Double Swivel Vise, manufactured by the Pittsburgh Automatic Vise & Tool Co., of Pittsburgh, Pa., has been perfected and owing to its unique design this vise is capable of turning in any direction, describing any angle of two complete circles. But it does not stop here, for the simple tightening the jaws upon the piece held, both swivels are automatically locked, not to be moved by any human

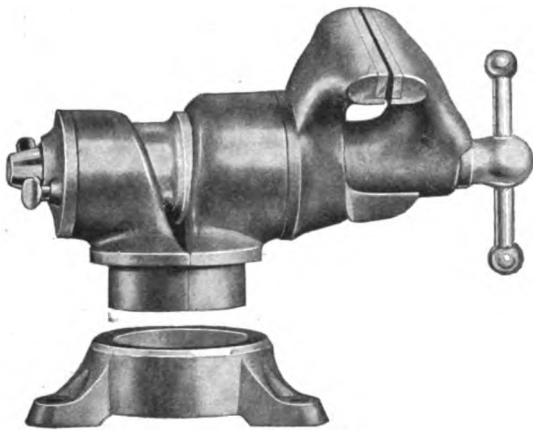


FIG. 1—LONG PATENT DOUBLE SWIVEL FEATURE.

means. Possessing these marked advantages and original characteristics it serves not only as a bench vise, but as a universal gig for drill presses, planers, shapers and other machines where an article is desired to be held firmly at any angle. For this purpose an extra base is provided, the vise being easily lifted from one base to another without undoing any screw or bolt.

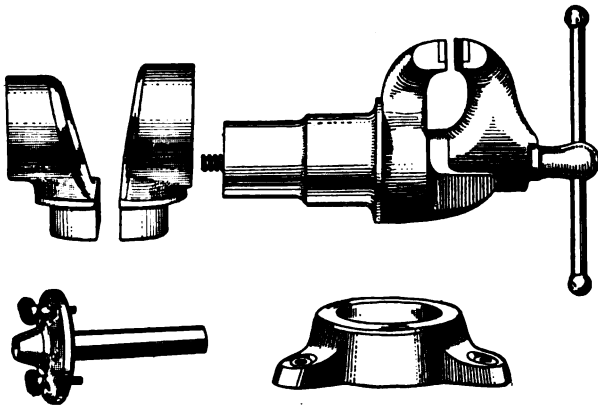


FIG. 2—SHOWING MECHANICAL PARTS OF VISE.

The vise itself is composed of eight sections or parts as illustrated in the accompanying cuts: The screw, front and rear jaws, two yokes, female screw, friction plate and base. This base which is adapted to be secured to any suitable support, is formed with an annular seat for the body of the vise. The body, consisting of two halves or yokes, provided each with a section or half hub seated in the base, are adapted to be slightly tilted in respect to each other and their seat, so that when they are drawn toward each other at their top they will be pressed outward below and thus locked frictionally in the base seat. The rear jaw is adapted to be rotated about its axis within the body of the vise. It has two diameters, the larger one working in the front yoke and the smaller one in the rear. The friction plate is affixed to the outer extremity of the jaw member. This cap bears against the outer edge of the rear yoke and serves as a support and bearing for the sleeve or nut. This possesses a head which bears against the outside of the friction plate or cap and extends thence through same into the internal bore of the front jaw. A special bearing sleeve is placed on the screw between its head and the fixed collar thus affording freedom of turning, but it is designed to be driven or forced tightly upon its seat in the front jaw so as to serve as a reliable backing for the collar when the screw is rotated to open the jaws. This also gives the lead of the screw a solid bearing against the full stock of the front jaw, therefore nothing to break or give way or become weakened under severe strains or pressure through the action of the screw.

Thus it will be understood that when the screw is tightened it tilts the body sections towards each other and locks them against rotation in the base. The inner jaw member has a spline connection with the inner jaw, thus preventing its rotation in respect thereto. In accordance with its design the idea of strength

is closely adhered to in its construction. The round slide bar, which adds phenomenal strength to the weakest part of all other vises, is made of the finest cast or crucible steel, specially melted and mixed for this purpose. The jaw facings are all of tool steel while the vise itself is composed of a semi-steel. The screw instead of being a common cast iron head cast upon a malleable or steel rod containing the thread, is a hammered steel forging made for this use alone. Thus it possesses the distinction of being absolutely dust proof, non-slipping and non-breakable. Due to its ability of having its jaws revolved in any direction it serves as two vises for if a smaller jaw than its face is desired, the jaws are simply thrown to one side and the side of the same used. If a stationary vise is desired the thumb screws on the rear can be slightly turned and the two swivels tightly locked. By this means any desired friction can be obtained.

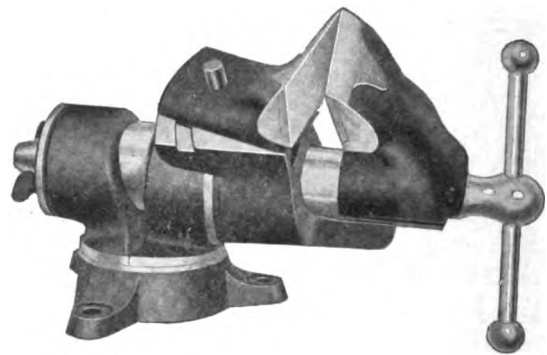


FIG. 3—LONG PATENT WOOD WORKERS' OR COACH MAKERS' VISE.

The single swivel vise, although possessing but one movement is also a very marked advancement in vise construction. Unlike any other vise it is automatically locked by tightening on the piece in the jaws. No levers, pins, screws or other "in the way" appliances. By lifting it from the base, the vise can be carried anywhere, as the vise consists of five parts, the rear and front jaws, screws, base and locking dog. The latter is so constructed as to permit the screw to pass through to its upper extremity. It is pivoted near its bottom upon an alloy steel bar supported by the base. Thus when the jaws are tightened upon an object the screw draws the dog towards them, which naturally throws its bottom out against the walls of the base, thus locking it firmly.

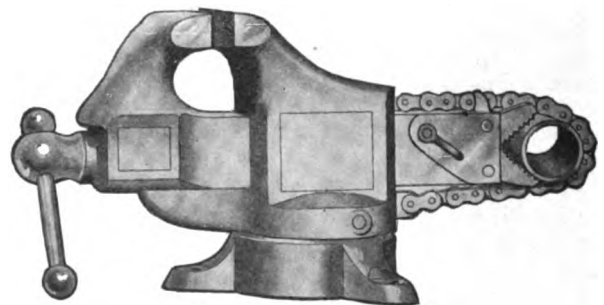
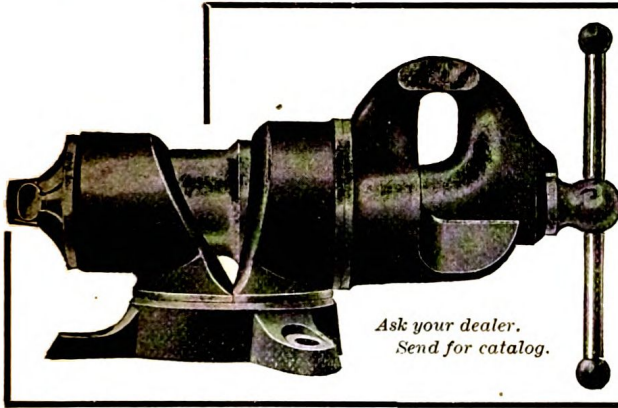


FIG. 4—LONG PATENT SINGLE SWIVEL PIPE VISE.

In conformity with the originality and usefulness of the previously described tools, the pipe attachment for the single swivel vises, deserves mentioning. Unlike any other vise the inventors have placed this important attachment on the rear end of the slide bar, out of the way at all times of the operator, the pipe jaws never interfering with the reception of work in the vise jaws proper. It consists of a tool steel attachment, milled perfectly to size, the two sides straddling the end of the slide bar. These are held in place by a bolt. A double linked chain, the pivot pins of which project beyond the sides of the links at each side is attached at one end by a lug or pin to the body of the vise below the slide bar. By placing the tube or pipe in position, the chain is brought around it, and fastened to the lugs on the upper portion of the attachment. The screw is then given a half turn, which throws the draw bar back, thus tightening the chain upon the pipe and at the same time locking the swivel movement. Its great advantages can readily be understood and appreciated by all mechanics. The necessity of opening the jaws sufficiently wide for the reception of the pipe is done away with, as the length of the chain is sufficient to engage the pipe regardless of the position of the jaws. The range of sizes are also increased 100 per cent. over other combination pipe vises.



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